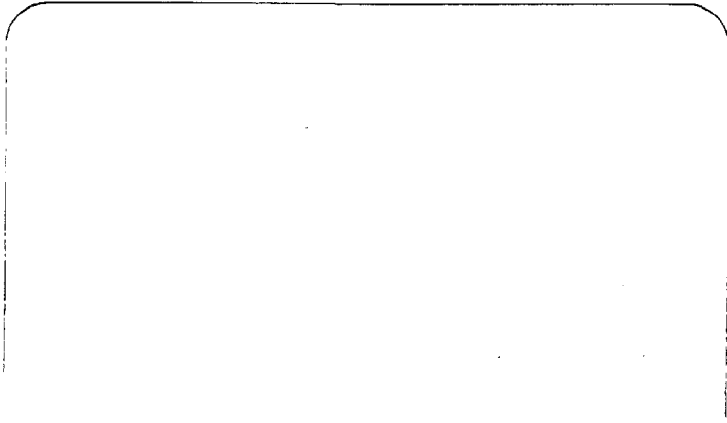


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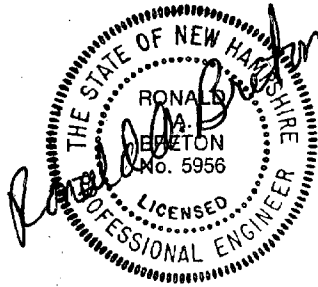
Coastal Zone Management Program



COASTAL ZONE  
INFORMATION CENTER

HD  
2385  
.N4  
S6  
1986

**nai**  
**NORMANDEAU ASSOCIATES, INC.**  
**ENVIRONMENTAL SCIENTISTS,  
ENGINEERS & PLANNERS**



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SPECIFICATIONS  
FOR  
BASS BEACH PROJECT

U.S. DEPARTMENT OF COMMERCE NOAA  
COASTAL SERVICES CENTER  
2234 SOUTH HOBSON AVENUE  
CHARLESTON, SC 29405-2413

Prepared for  
TOWN OF NORTH HAMPTON  
BOARD OF SELECTMEN

Prepared by  
NORMANDEAU ASSOCIATES, INC.  
25 Nashua Road  
Bedford, New Hampshire 03102

March 15, 1986

P-#494

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HD2385.N4 S6 1986

DEC 6 1986

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Sealed proposals will be received at the North Hampton Town Hall, North Hampton, New Hampshire, until 4:00 P.M., Friday, to remove an earth embankment railroad bridge and a 36" culvert located at the Bass Beach Wetlands Area in North Hampton.

Specifications and bid forms will be available at the North Hampton Town Hall, North Hampton, New Hampshire. The Board of Selectmen jointly and severally, reserve the right to waive any informalities in, or to reject any or all bids.

TOWN OF NORTH HAMPTON  
BOARD OF SELECTMEN

Stanley Knowles,  
Chairman

1.0 INSTRUCTION TO BIDDERS

1.1 PROJECT

Remove an Earth Embankment Bridge and a 36" culvert at Bass Beach on Route 1A in North Hampton, in accordance with the Contract Documents.

1.2 CONTRACT DOCUMENTS

A non-reimbursable certified check for twenty dollars (\$20.) will be required for each set of Contract Documents. The check shall be made out to: The Town of North Hampton.

1.3 BID SUBMITTAL

- a) Sealed bids shall be mailed or delivered to the:

North Hampton Town Hall  
North Hampton, New Hampshire

- b) The face of the envelope shall be entitled:

Bass Beach Project

- c) Bids must be received no later than 4:00 P.M. EDT on  
and immediately following that time  
they will be publicly opened.
- d) No bid will be considered unless accompanied by a  
certified check, cashier's check, or bid bond for  
an amount not less than ten percent (10%) of the  
total bid price. Said check or bond shall be made  
payable to the Town of North Hampton.
- e) All bids shall be on the forms furnished in this  
document. See BID section. All applicable blanks  
must be filled in, and the bid signed by a duly  
authorized agent of the firm.
- f) Any statement accompanying and tending to qualify  
the bid may cause a rejection of the bid.
- g) Bidders shall bid on all applicable items in the bid.  
Bids which are incomplete may be rejected.



- h) Bids may be withdrawn only if written notification is received by the owner prior to the closing time for filing bids. Negligence on the part of the bidder in submitting his bid confers no right to withdraw the bid. Bidders may not withdraw their bid after the bid opening.

Special attention of Bidders is called to the General Conditions and Special Conditions which contain supplementary information for Bidders.

1.4 REJECTION OF BIDS

The Owner reserves the right to reject any and/or all bids in whole or in part, and to waive irregularities not affecting substantial rights.

1.5 PROPOSALS

All Proposals must be clearly and distinctly typed or written with ink or indelible pencil. No erasures are permitted. Mistakes must be crossed out and corrections written in ink adjacent thereto, and initialed in ink by the party signing the bid, or his authorized representative.

1.6 INVESTIGATION

The Bidder shall make at his own risk, all investigations necessary to inform himself regarding the item to be furnished and any existing conditions which will need evaluation and alterations. The bidder must inspect the site of the proposed work and assume all risk as to the nature and behavior of the soil which may be encountered whether apparent upon surface inspection or disclosed only in the process of carrying forward the work.

1.7        VARIANCES

The Owner reserves the right to determine if methods or materials which comply substantially in quality and performance with the Specifications are acceptable to the Owner, and if any variance listed by the Bidder in his Proposal is material or immaterial.

1.8        PRICES

The prices submitted shall be firm during the Contract period.

1.9        TAXES

The Bidder agrees that all applicable Federal, State and Local sales and use taxes are included in the Lump Sum Bid.

1.10       CLARIFICATION OF CONTRACT DOCUMENTS BY ADDENDA

No interpretation of the meaning of the Specifications or other pre-bid Documents will be made to any Bidder orally. Every request for such interpretation should be in writing and addressed to the Town's resident agent. All requests for interpretation must be received at least seven (7) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the Specifications and will be mailed to all prospective Bidders (at the respective addresses furnished for such purposes), not later than two (2) days prior to the date fixed for the opening of bids. Failure to any Bidder to receive any such Addendum or interpretation shall not relieve such Bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

1.11 BASIS OF AWARD

If at the time this Contract is to be awarded the lowest base bid does not exceed the amount of funds then estimated by the Town, as available to finance the Contract, the Contract will be awarded on the base bid. Notice of Acceptance will be given to the successful bidder by the Town of North Hampton acting through its Board of Selectmen, by posting a registered letter to the address stated in the proposal.

The award will be made by the Owner on the basis of a Proposal from a responsible Bidder which, in the Owner's sole and absolute judgment, will best serve the interests of the Town. Consideration will also be given to the Bidder's technical proposal, experience, and reputation.

The Owner shall be the sole judge of the Bidder's responsiveness to these requirements, and hereby reserves the right to reject any or all bids in whole or in part, to waive irregularities not affecting substantial rights, and to consider that proposal for any individual item of equipment which is in the best interests of the Town.

Any determinations of the responsible Bidder(s) and Award(s) shall be subject to review and determination by the Town's attorney as to legal sufficiency of any bid submitted.

1.12      DISCLAIMER

This bid does not commit the Owner to pay any costs incurred by any Bidder in the submission of a bid or in making necessary studies or designs for the preparation thereto, or for procuring or contracting for the items to be furnished under the instruction to bid.

1.13      INTENT OF CONTRACT DOCUMENTS

The intent of the Specifications is to prescribe the details for the removal of the earth embankment bridge and 36" culvert which the Contractor undertakes to perform in accordance with the terms of the Contract. Where the Specifications describe portions of the work in general terms but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. The Contractor shall furnish all labor, materials, and equipment necessary to perform all work, in accordance with the permits, requirements as specified in the Contract Documents. All work, materials, and services not expressly called for in the Specifications, but which are specific to and necessary for completion of this project, shall be performed and furnished by the Contractor, at no increase in cost to the Owner.

If the Contractor, in the course of the work finds any discrepancies, errors, or omissions in the Contract Documents, it shall be his responsibility to immediately notify the Owner, in writing, of any such discrepancies, errors, or omissions. The Owner will then clarify any such reported discrepancies, errors, or omissions, for the Contractor, in writing, within a reasonable time thereafter. All work performed by the Contractor, prior to the date which he notifies the Owner of any such discrepancies, errors, or omissions, will be done solely at the Contractor's risk, with no cost obligation on the part of the Owner.

It is the intent of the Contract Documents that a requirement occurring in one section is as binding as though occurring in all. The sections are intended to be cooperative and to describe and provide for all Contract work as specified in the Contract Documents.

Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Owner for such further explanations as may be necessary and shall conform to them as part of the Contract. In the event of any doubt or question arising respecting the true meaning of the Contract Documents, reference shall be made to the Owner and his decision thereon shall be final.

1.14 PREPARATION OF BIDS

All prices shall be quoted in United States dollars only. All prices quoted in the Bid shall remain firm for the term of the Contract.

Required information, including but not limited to, construction methods to be used, kind and type of equipment to be used, and schedule of work, shall be submitted with each Bid as requested, for the Owner's review and approval.

The Bid for the work is to be submitted on a lump sum basis. A single lump sum price shall be submitted in the appropriate place. The total amount to be paid the Contractor shall be the amount of the lump sum Proposal as adjusted for additions or deletions resulting from authorized changes.

2.0 PROPOSAL

2.1 BIDDER'S DECLARATION AND UNDERSTANDING

The Bidder declares that the only persons or parties interested in this Proposal are those named herein, that this Proposal is, in all respects, fair and without fraud, that it is made without collusion with any official of the Town, and that the Proposal is made without any connection or collusion with any person making another Proposal on this Contract.

The Bidder further declares that he has carefully examined the Contract Documents, and that this Proposal is made according to the provisions and under the terms of the Contract Documents, which Documents are hereby made a part of this Proposal.

If this bid is accepted, the Bidder agrees to sign and deliver the Contract, with accompanying Performance and Payment Bond in the amount of 100 percent of the bid, to the Town's attorney within 15 calendar days after receipt of said Contract from the Owner.

The Bidder further agrees that in the event he fails to comply within the foregoing provisions, the bid security accompanying this Proposal shall become the property of the Owner.

The Bidder further acknowledges the evaluation procedure set forth in the Instructions to Bidders.

The Bidder further agrees to save the Owner free from all loss of damage that may result from the wrongful or unauthorized use of any patented article or process hereunder, pursuant to the provision of the General Conditions entitled Legal Relations and Responsibility.

The Bidder further agrees to remedy all defects appearing in the work or developing in the materials furnished and the workmanship

performed under this Contract for the periods stated in the General Conditions under Guarantees, and further agrees to indemnify and save the Town harmless from any costs encountered in remedying such defects.

2.2 COMPLETION DATE

The Bidder agrees to remove the railroad bridge and culvert, as specified in the Contract Documents, within 30 calendar days after the date of execution of the Contract by the Owner.

2.3 LIQUIDATED DAMAGES

- A. Time is of the essence. If the Contractor fails to complete the work as specified within the Contract or any extension thereof granted by the Owner, liquidated damages of \$1,500 per calendar day will be assessed.

In consideration of the performance of the work as set forth in these Contract Documents, the Owner agrees to pay the Contractor the amount bid in the Proposal as adjusted in accordance with the Contract Documents, or as otherwise herein provided, and to make such payments in the manner and at the times provided in the Contract Documents. The Contractor shall accept as full payment hereunder the amounts computed as determined by the Contract Documents and based on said Proposal.

It is understood and agreed by the parties hereto that:

1. The Instructions to Bidders, the signed copy of the Bid, the Bid Bond, the fully executed Performance and Payment Bond, the General Conditions, the Plans and the Specifications dated March 15, 1986, are hereby referred to and by reference made a part of this Contract as fully and completely as if the same were fully set forth herein and are mutually cooperative therewith.
2. Any reference in this Contract to the Specifications is intended as a convenience to the parties in administration of the Contract. Therefore, in the absence of an express statement to the contrary herein, any restatement or partial restatement in this Contract of any provision of the Specifications is not intended, nor shall it be construed to change, alter, modify, amend, or delete the requirements of the Specifications.

IN WITNESS WHEREOF, the Town of North Hampton has caused these presence and four (4) other original duplicate contracts of like tenor and date, to be signed in its name and behalf and its official seal hereunto affixed by its officers thereunto, duly authorized; and the said Bidder has caused these presence and four (4) other original duplicate Contracts of like tenor and date, to be signed in its name and behalf and its official seal hereunto affixed by:

\_\_\_\_\_ this \_\_\_\_\_  
Its officer thereunto duly \_\_\_\_\_ the day and year  
authorized first above written

Submitted by: \_\_\_\_\_  
\_\_\_\_\_ a Corporation  
\_\_\_\_\_ a-Partnership  
\_\_\_\_\_ an-Individual

Principal Office: \_\_\_\_\_  
\_\_\_\_\_

Person to contact for additional information on this submittal:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

For Removal of an Earth Embankment Bridge, 36" culvert and appurtenant work. The lump sum of:

\_\_\_\_\_ (dollars)  
(\$ \_\_\_\_\_)

This bid includes the following addenda:

\_\_\_\_\_  
Principal Officer  
(Signature & Title)



Certificate of Acknowledgement of Contractor, if a Corporation

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 198\_\_,  
before me personally came to me know, who being duly sworn did say as  
follows:

that he resides at \_\_\_\_\_

and is the \_\_\_\_\_

of \_\_\_\_\_, the Corporation

described herein and which executed the foregoing instrument; that he  
knows the corporate seal of said corporation; the seal affixed to the  
foregoing instrument is such corporate seal and it was so affixed by  
order of the Board of Directors of said corporation and by the like  
order, he signed thereto his name and official designation.

\_\_\_\_\_  
Notary Public (seal)

My commision expires \_\_\_\_\_

Town of North Hampton

Chairman of Board  
of Selectmen

\_\_\_\_\_  
Walter Lermer

Selectman

\_\_\_\_\_  
Robert Carrigg

Selectman

\_\_\_\_\_  
Richard Lynch

Signed and Sealed in the  
presence of:

\_\_\_\_\_  
Date

\_\_\_\_\_  
, Notary

\_\_\_\_\_  
Contractor

by

\_\_\_\_\_  
Title

Approved as to form and execution:

\_\_\_\_\_  
Date

\_\_\_\_\_  
Attorney

3.0 BID BOND

KNOW ALL MEN BY THESE PRESENCE, that we \_\_\_\_\_,  
\_\_\_\_\_, as Principal, and \_\_\_\_\_,  
\_\_\_\_\_, a Corporation organized and existing under  
the laws of the State of \_\_\_\_\_,  
and duly authorized to transact a surety business in the State of New  
Hampshire, as surety, are held and firmly bound unto the TOWN OF NORTH  
HAMPTON, a municipal corporation of the State of New Hampshire, in the  
penal sum of \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_) lawful money of the United States of America,  
for the payment whereof well and duly to be made, we and each of us,  
jointly and severally bind ourselves, our heirs, executors, administra-  
tors, successors and assigns, firmly by these presence.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that where as the Principal  
has submitted or is about to submit a Bid irrevocable for the period  
specified in the Proposal to the OBLIGEE on a Contract for removal of  
railroad bridge, 36" culvert and appurtenant work.

NOW THEREFORE, in the event the Principal seeks to revoke his offer for  
any reason not authorized by law and not consented to by OBLIGEE within  
the irrevocable period and if awarded the Contract and the said  
Principal fails, neglects, or refuses to enter into a Contract to per-  
form said work and furnish said labor, equipment and/or material, and to  
furnish performance and labor material payment bonds as required within  
the time specified, then the amount herein stated shall be declared to  
be forfeited and become due and payable to the Town of North Hampton.

Signed, Sealed, and Dated this \_\_\_\_\_ day of \_\_\_\_\_, 198 \_\_\_\_

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Address

\_\_\_\_\_  
By  
Title

\_\_\_\_\_  
Surety

\_\_\_\_\_  
By  
Attorney-In-Fact

\_\_\_\_\_  
New Hampshire Agent for Service

\_\_\_\_\_  
Address

CORPORATE SEAL (PRINCIPAL)

CORPORATE SEAL (SURETY)

NOTE: If Principal is operating under an assumed business name, there must also be set forth in the first paragraph of the bond, the names of all the partners or the individual owning the business, and the bond must be executed by one of them.

If the Principal is a Corporation, the bond must be executed by one of the officers authorized to execute bonds, showing his official title and the seal of the Corporation.

The bond must be executed by an attorney-in-fact for the SURETY COMPANY, show on the face thereof the New Hampshire agent for service, and bear the seal of the SURETY COMPANY. Where the bond is executed by a person outside the State of New Hampshire, his authority to execute bonds should be shown.

#### 4.0 GENERAL CONDITIONS

##### 4.1 GENERAL

In the event of conflicts or inconsistencies among two or more sections of the Contract Documents, the owner shall determine precedence.

##### 4.2 DEFINITIONS

Unless otherwise defined in the Contract Documents, the following definitions and abbreviations shall apply wherever used.

The words directed, required, permitted, ordered, requested, instructed, designated, considered necessary, prescribed, approved, acceptable, satisfactory, or words of like import, refer to actions, expressions, and perogatives of the Owner.

Command type sentences are used throughout these Contract Documents. In all cases, the command expressed or implied is directed to the Contractor.

###### 4.2.1 Acceptances

The formal written acceptance by the Owner of the entire Contract which has been completed in all respects in accordance with the requirements of the Contract Documents. Such acceptance shall occur after the successful completion of the project as determined by the Owner.

4.2.2 Bidder

Bidders shall be construction companies experienced in earth removal projects.

4.2.3 Change Order

A written order to the Contractor and approved by the Owner, requiring the Contract work to be performed in accordance with a change or changes that involve an adjustment in the basis of payment, or time of completion, or requiring performance of any unforeseen work essential to complete the Contract but for which no basis for payment is provided in the Contract.

4.2.4 Contract

The complete specifications contained herein covering the performance of the work and the furnishing of labor, material, tools, equipment, and services. The Contract shall be comprised of all Contract Documents, including the Plans, Instructions to Bidders, Bid, Bonds, General Conditions, Appurtenant Work and all supplemental agreements amending or extending the work contemplated, and which may be required to complete the work in a substantial and acceptable manner. Supplemental agreements are written agreements covering alterations, amendments, or extensions to the Contract and include Contract Change Orders.

4.2.5 Contractor

The Person or persons, firm, partnership, corporation, or combination thereof who have entered into this Contract with the Owner as part of parties of the second part, or his or their legal representatives.

4.2.6 Days

Unless otherwise designated, days as used throughout the Contract Documents shall mean calendar days.

4.2.7 Drawings

The official plans, profiles, typical cross sections, general cross sections, detail drawings, and supplemental drawings or reproductions thereof which show the location, character, dimensions, and details of the work to be performed.

4.2.8 Federal and State Agencies

Whenever throughout the Contract Documents reference is made to any Federal or State agency or officer, such reference shall be deemed made to any agency or officer succeeding in accordance with law to the powers, duties, jurisdiction, and authority of the agency or officer mentioned.

4.2.9 Jobsite

The Bass Beach site, located on Route 1A in North Hampton, New Hampshire.

Owner

The Town of North Hampton, Acting through its Board of Selectmen.

Resident Agent

The authorized agent of the Board of Selectmen.

#### 4.2.10 Work

All of the work specified, indicated, shown or contemplated in the Contract to furnish the equipment and services including all alterations, amendments or extensions thereto made by Contract Change Order or other written order of the Engineer.

#### 4.3 BID SECURITY

The Bid security will serve (1) as a guarantee that the Bids shall be irrevocable for a period of sixty (60) calendar days after the bid opening date, and (2) as liquidated damages should the Bidder fail or neglect to furnish the required Performance and Payment Bond and insurance and execute the Contract within fifteen (15) days after receiving said Contract from the Town for execution. If a Bid Bond is submitted as security, in lieu of a certified check or cashier's check, such Bid Bond shall be on the form furnished by the Owner and included in the Contract Documents.

All bid securities shall be retained by the Owner for thirty (30) days after the Town's award of Contract to the successful Bidder. However, the bid security of the successful Bidder, and that of the Bidder whose bid was responsive and closest to that of the successful Bidder, shall be retained until the Owner has received a signed and approved Contract, Performance and Payment Bond, and insurance certificate, as specified herein. Except as provided hereinafter, all bid securities shall be retained, as authorized herein, to allow award of the Contract to another Bidder without readvertising, where the Bidder to whom the Contract was awarded fails, neglects, or refuses to enter into the Contract.

When the Town has received a signed, and approved Contract, Performance and Payment Bond, and insurance certificate, as specified herein, all bid securities relating to the particular Contract shall be released.



In the event that all bids for this Contract are rejected by the Owner, the bid securities relating thereto shall be released.

4.4 CHANGES AND EXTRA WORK

The Owner reserves the right to make such alterations, deviations, additions to, or deletions from, the specifications, including the right to increase or decrease the quantity of any item or portion of the work, or to omit any item or portion of the work, as may be deemed by the Owner to be necessary or advisable and to require such extra work for the property completion of the whole work contemplated.

Any such changes will be set forth in a Contract Change Order which will specify in addition to the work to be done in connection with the change made, adjustment of the Contract time of completion, and the basis of compensation for such work. A Contract Change Order will not become effective until approved by the Owner.

All such Contract Change Orders involving no additional cost to the Contract, shall be complied with by the Contractor without extra cost to the Owner. Contract Change Orders involving an increase in work shall be done at a price mutually agreed upon between the Contractor and the Owner. Contract Change Orders involving a reduction in work shall be credited to the Owner in an amount to be determined in the same manner.

A written Contract Change Order, approved by the Owner, may be issued to the Contractor at any time.

4.5 CONTROL OF WORK AND MATERIALS

The Owner shall decide all questions which may arise as to the quality of acceptability of equipment furnished and work performed and as to the manner of performance and rate of progress of the work; all questions which may arise as to the interpretation of the Contract

Documents; all questions as to the acceptable fulfillment of the Contract on the part of the Contractor; and, all questions as to compensation. The Owner's decision shall be final and he shall have the authority to enforce and make effective such decisions.

4.6        DEFECTIVE MATERIAL AND WORK

All materials not conforming to the requirements of the Specifications will be rejected by the Owner whether in place or not. Such materials shall be removed immediately from the jobsite, unless otherwise permitted by the Owner. Upon failure of the Contractor to comply promptly with any order of the Owner made under the provisions herein, the Owner shall have authority to cause the removal or replacement of rejected materials at the expense of the Contractor.

4.7        LEGAL RELATIONS AND RESPONSIBILITY

4.7.1      Laws to be Observed

Materials to be furnished under this Contract shall be so designed and constructed that when installed, it will comply with all applicable laws and/or regulations of the Town of North Hampton, the State of New Hampshire and the U.S. Government. All costs incurred in complying with these requirements are understood to be included in the Contract price, and therefore, at the Contractor's expense.

4.7.2      Permits and Licenses

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the Contract work.

#### 4.7.3 Payment of Taxes and Duties

The Contractor shall include in the Contract price and pay for all taxes and duties, regardless of their nature or origin, which are or may be imposed upon the equipment until delivered, f.o.b. to the jobsite.

#### 4.7.4 Patented Devices, Materials, and Processes

If the Contractor is required or desires to use any design, device, material, or process covered by letters, patent, or copyright, he shall provide for such use by suitable legal agreement with the patentee or patent owner. The Contractor and his surety shall indemnify, save harmless, and defend if requested by the Owner, the Owner from any and all claims for infringement by reason of the use of any such patented design, device, material, or process, or any trademark or copyright in connection with the work agreed to be performed under this Contract, and shall indemnify the Town for any costs, expenses, and damages which it may be obliged to pay for reason of any such infringement at any time during the prosecution or after the completion of the work.

#### 4.7.5 No Waiver of Legal Rights

The Owner shall not be precluded or estopped by any estimate or certificate made either before or after the completion and acceptance of the work, and payment therefore, from showing the true amount and character of the work performed, and materials and services furnished by the Contractor, nor from showing that any such estimate or certificate is untrue or is incorrectly made, nor that the work, or materials, do not exactly conform to the Contract. The Owner shall not be precluded or estopped, notwithstanding any such certificate and payment in

accordance therewith, from recovery from the Contractor or his surety or both, such damages as it may sustain by reason of the Contractor's failure to comply with the terms of the Contract. Neither the acceptance by the Owner or by his representative, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the Owner shall operate as a waiver of any portion of the Contract or of any power herein reserved, or of any right to damages. A waiver of any breach of the Contract shall not be held to be a waiver of any other or subsequent breach.

4.7.6     Acceptance of Contract

The acceptance by the Contractor of the final payment shall release the Town, the Owner and its resident agent from all claims and all liabilities to the Contractor for all things done or furnished in connection with the work, and every act of the Town, Owner, and its resident agent and others relating to or arising out of the work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from obligations under this Contract and the Performance and Payment Bond, and other bonds and warranties, as herein provided.

4.7.7     Notice of Labor Dispute

Whenever an actual or potential labor dispute is delaying or threatens to delay the performance of the work, the Contractor shall immediately notify the Owner in writing. Such notice shall include all relevant information concerning the dispute and its background.

4.7.8     Default and Annulment of the Contract

If the Contractor fails to perform the work with such diligence as to ensure the prompt completion of said work, or shall

perform the work unsuitably, or shall neglect or refuse to perform anew such work as shall be rejected as defective and not suitable, or shall discontinue the prosecution of the work or shall fail to resume within a reasonable time after notice to do so, work which has been discontinued, or if the Contractor shall become insolvent or be declared bankrupt or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of ten (10) days, or shall make an assignment for the benefit of creditors, or for any cause whatsoever shall not carry on the work in an acceptable manner, the Owner will give notice, in writing, to the Contractor and his Surety of such delay, neglect, or default specifying the same.

If the Contractor or Surety does not proceed in accordance therewith, within a period of ten (10) days after award of the Contract, then the Owner shall have full power and authority, without violating the Contract, to take the entire contractual prosecution of the work out of the hands of said Contractor. The Town may appropriate or use any or all materials and equipment that may be suitable, and may enter into an agreement for the completion of said Contract, according to the terms and provisions thereof, or use such other methods as, in their opinion, shall be required for the completion of said Contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under Contract, shall be deducted from any monies due or which may become due the Contractor. In case the expense so incurred by the Owner shall exceed the sum which would have been payable under the Contract, then the Contractor shall be liable and shall pay to the Owner the amount of said excess.

4.7.9      Insurance, Liability and Indemnity

The Contractor shall provide, from insurance companies acceptable to the Town, the insurance coverage designated hereinafter and pay all costs, when the Contractor's services are required at the site.

Before providing services at the site as set forth above, the Contractor shall furnish the Town and Owner with certificates of insurance specified herein, showing the type, amount, class of operations covered, effective dates, and date of expiration of policies, and containing substantially the following endorsements:

1. Without prejudice to coverage otherwise existing herein, the Town of North Hampton and all other governmental bodies having jurisdiction in the area, their officers, and employees are included as additional insureds under this policy as to any claim or claims for injury to person, including death, or damage to property, resulting from or growing out of the operations of the named insured, including all operations of subcontractors, under the Contract with the Town of North Hampton, entitled: Town of North Hampton, New Hampshire, Specifications for Bass Beach Project.
2. It is understood and agreed that this policy shall not terminate or be cancelled prior to completion of all Contractor's services work specified under the Contract Documents, unless approved by the Owner.
3. Notwithstanding the naming of additional insureds, the said policy shall protect each insured in the same manner as though a separate policy had been issued to each; but nothing herein shall operate to increase the insurer's liability as set forth elsewhere in the policy beyond the amount or amounts for which the insurer would have been liable if only one person or interest had been named as insured.

A certification evidencing such insurance together with the above endorsement shall be filed with the Town's attorney within ten (10) days after receiving the Contract from the Owner for execution, and shall be subject to the approval of the Town's attorney as to adequacy of protection.

In case of the breach of any provision of this article, the Owner will have the option to take out and maintain at the expense of the Contractor, such insurance as the Owner may deem proper, and may deduct the cost of such insurance from any monies which may be due or become due the Contractor under this Contract.

The Contractor shall not commence work under this Contract until he has obtained all the necessary insurance coverages required for all Contract work specified herein, including all portions of the Contract work to be completed by subcontractors, as approved by the Owner. Review and approval by the Town of such insurance shall not relieve or decrease the liability of the Contractor hereunder.

The Contractor shall procure and maintain insurance as specified below and in such form as shall protect him and any subcontractor performing work covered by this Contract and the Owner, if so provided herein, from all claims and liability for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them.

The Contractor shall carry Comprehensive General Liability Insurance with limits not less than \$1,000,000 per occurrence for Bodily Injury and \$500,000 per occurrence for Property Damage and Automobile Liability Insurance with limits not less than \$500,000 per person and \$1,000,000 per occurrence for Bodily Injury and \$500,000 per occurrence for Property Damage covering all work performed under this Contract. Such insurance shall include the following:

1. All operations including use of all vehicles.
2. Contractual liability covering this Contract.
3. Coverage for the so-called "x,c,u" hazards, i.e., collapse of buildings, blasting and damage to underground property.

4. Completed operations hazard for a period of at least two (2) years following acceptance by the Town of the completed Contract.
5. Use of watercraft, where applicable.
6. "Personal" injury coverage (in addition to "Bodily" injury).

The Contractor shall carry Worker's Compensation Insurance including Employer's Liability Insurance, as provided by the New Hampshire Revised Statutes Annotated, 1955, as amended, covering all work performed by him under this agreement.

Owner's Protective Insurance secured by the Contractor, in behalf of the Owner which will directly protect the Town of North Hampton from liability for bodily injuries, including accidental death, in the amounts required above and for property damage in the amounts required above.

Insurance similar to that required of the Contractor, shall be provided by or on behalf of all subcontractors to cover their operations performed under this agreement. The Contractor shall be held responsible for any modifications in these insurance requirements as they apply to subcontractors.

#### 4.7.10 Insurance Certificates

Insurance certificates evidencing the above, are to be furnished to the Owner at time of execution of the Contract and shall provide for not less than thirty (30) days prior notice to the Town of any cancellation or major change in the policies.



The Contractor's liability insurance and property damage insurance shall provide the primary coverage on all claims arising out of the performance of the Contract, and shall name the Town, its officers, agents, and employees, as additional named insureds herein.

The Contractor shall hold harmless, indemnify, and defend the Town, the Owner and his representative, and each of their officers, employees, and agents, from any and all liability claims, losses, or damages arising or alleged to arise from or during the performance of the work described herein.

In carrying out any of the provisions thereof in exercising any authority granted by the Contract, there will be no personal liability upon any public official.

4.8 COMMENCEMENT OF WORK AND EQUIPMENT DELIVERY SCHEDULE

The Contractor shall commence the work upon execution of the Contract.

4.9 PROSECUTION AND PROGRESS

4.9.1 Subcontracting

The Contractor shall give his personal attention to the fulfillment of the Contract and shall keep the work under his control.

No subcontractor will be recognized as such, and all persons engaged in the work of excavation will be considered as employees of the Contractor and he will be held responsible for their work, which shall be subject to the provisions of the Contract.

4.9.2     Assignment

The performance of the Contract may not be assigned, except upon the written consent of the Owner. Consent will not be given to any proposed assignment which would relieve the original Contractor or his Surety of their responsibilities under the Contract.

4.9.3     Prosecution of Work

The Contractor shall perform the work in the order specified herein, and the work shall be conducted in such a manner as to ensure its completion in accordance with the drawings and Specifications within the Contract Time of Completion, as specified herein. Should the prosecution of the work for any reason be discontinued, the Contractor shall notify the Owner at least 24 hours in advance of resuming work.

4.9.4     Delays in Completion of Work

It is mutually agreed by the parties to the Contract that in case the work called for under the Contract is not completed within the Completion Time as specified herein, or within the extended time completion requirements as mutually agreed upon, or as more particularly set forth in the Contract Documents, the Contractor shall pay the Owner liquidated damages, and that the Owner may deduct the amount thereof from any monies due or that may become due the Contractor under the terms of the Contract.

4.9.5     Time Extensions

If the Contractor is delayed in the progress of the work by any act or neglect of the Owner, or by strikes, lockouts, fire, unusual weather conditions, or unavoidable casualties, the Contractor shall within 48 hours of the start of the occurrence give notice to the Owner

of the cause of the potential delay and estimate of the possible time extension involved. Within seven (7) days after the cause of delay has been remedied, the Contractor shall give notice to the Owner of any actual time extension requested as a result of the aforementioned occurrence.

Within a reasonable period after the Contractor submits to the Owner a written request for an extension of time, the Owner will make the decision on the request.

In no event shall the Contractor be entitled under this Contract to collect or recover any damages, loss, or expense incurred by any delay.

#### 4.10 PAYMENT

##### 4.10.1 Scope of Payment

The Contractor shall accept the compensation as herein provided as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work and performing all work contemplated and embraced under the Contract, also for loss or damage arising from the nature of the work or from any unforeseen difficulties which may be encountered during the prosecution of the work until final acceptance by the Owner, and for all risks of every description connected with the prosecution of the work, also for all expenses incurred in consequence of the suspension or discontinuance of the work as herein specified, and for completing the work according to the Contract Documents. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor from any obligation to make good any defective work or material.

No compensation will be made in any case for loss of anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as provided in such agreements.

4.10.2 Changes and Altered Quantities

Payments on Contract Change Orders will be made in the same manner as provided for Contract work hereinafter specified.

4.10.3 Payment Schedule

The Owner shall pay the Contractor ninety (90) percent of the lump sum contract price upon acceptance of the completed project by the Owner. Before presenting this invoice for payment, the Contractor shall file with the Owner a sworn statement that all items of labor, materials and equipment comprising the total project have been paid for. However, payment will be withheld due to defective workmanship. In such event, payment will not be made until corrective measures have been implemented, at the Contractor's expense.

Twelve (12) months after acceptance of the project the remaining ten (10) percent will be paid by the Owner within forty-five (45) days of being presented the final invoice for payment.

4.11 GUARANTEES

If, within a period of one year following final acceptance by the Owner of all Contract work, the workmanship is found defective, the Contractor shall, at his own expense, correct the workmanship, in a manner approved by the Owner.

The guarantee period for correction of the workmanship, as deemed necessary by the Owner to meet the requirements of the Contract Documents, shall be extended for a period of one year following the time that such alterations have been completed, and such work has been accepted by the Owner.

#### 5.0 SPECIAL CONDITIONS

1. The work described by these specifications shall include furnishing all labor, skill, supervision, tools, equipment, and materials necessary to remove a railroad embankment bridge and a 36" culvert pipe, and appurtenances as shown on the drawings and described by these specifications.

2. The entire work provided for shall be performed in every respect in a good workmanlike and substantial manner. All materials necessary for a completed project whether the same has been specifically mentioned or not, or indicated in the drawings, shall be done, and furnished as if it were provided for herein. It is intended that all work will be done in accordance with the best practices known.

3. The Contractor shall verify the location of all utilities prior to commencing construction. Any utilities that must be moved for the successful completion of the project shall be done at the Contractor's expense.

4. The Contractor shall take and develop at least 20 pictures of the site and abutting property before he commences construction. These pictures will be given to the resident agent for his verification as to the conditions of the area prior to the commencement of work.

5. The Contractor shall ensure, that upon successful completion of the work, that the area is the same or better than it was prior to construction. The final determination of the acceptability of the site will be made solely by the Owner. Any changes or alterations that the Owner deems necessary to restore the area to its original condition shall be done immediately by the Contractor, and at no cost to the Owner.

6. The channel between the marsh and the ocean must be kept open at all times, to allow proper draining and flushing. At the time of the bid, the Contractor will submit the construction procedures that he will use to ensure that the channel will be kept open.

7. Excavated material that cannot be disposed on site must be removed by the Contractor and taken to a site approved by the Owner, at no cost to the Owner. The Owner's representative shall make the sole determination as to which materials must be removed from the site.

8. Unless agreed to by the Owner, no work shall be done between the hours of 6 P.M. and 8 A.M., or on weekends.

9. The Owner does not guarantee nor make any representation as to the soil conditions to be encountered.

10. Prior to the start of construction, the Contractor shall obtain all construction easements as necessary for the carrying out and completion of the work to be performed under this Contract.

11. The contractor shall store his equipment, and materials in an orderly fashion so that the work site shall present a neat and orderly appearance. The Contractor shall also ensure that during the term of this project that private driveways remain passable at all times.

12. No blasting shall be permitted on this project without the approval of the Owner. Any damage resulting from blasting shall be repaired at the Contractor's expense.

6.0 TECHNICAL SECTIONS

6.1 CLEARING

6.1.1 General

- A. Work Included: Clearing work, when applicable, includes but is not limited to, removal of trees brush, stumps, wooded growth, grass, shrubs, poles, posts, stones, culverts, and vegetation. The protection of designated wooded growth; the disposal of nonsalvageable structures and materials, and necessary grading.
- B. Limits of work:
1. Perform clearing work within the areas shown on the drawings.
  2. Perform additional clearing work within areas and to depths which, in the opinion of the resident agent, interfere with excavation and/or construction, or are otherwise objectionable.
- C. Work Not Included: Clearing and/or grubbing work performed for the convenience of the contractor will not be considered for payment.

6.1.2 Quality Assurance

- A. Requirements of Regulatory Agencies: Disposal of combustible material by burning shall not be permitted on the site.

- B. Satisfactorily remove and dispose of nonsalvageable material in accordance with all applicable local and State laws, ordinances, and code requirements.

6.1.3 Materials

- A. Furnish all materials required to complete the work in complete accordance with these specifications and as shown on the drawings.
- B. Restore materials to be replaced to their original condition and location.
- C. Repair any damage to structures using the same materials contained in the structures, to the complete satisfaction of the Owner.

6.1.4 Preparation

- A. Carefully preserve and protect from injury all trees and/or shrubs marked to be saved by the resident agent.
- B. Right-of-Way:
  - 1. Where excavation is required on public or private rights-of-way containing trees, shrubs, other growth or any structure or construction, obtain the Engineer's direction concerning the extent to which such obstacles can be cleared or stripped prior to performing work.
  - 2. In all rights-of-way, remove only those particular growths which are in the opinion of the resident agent, essential for construction operations.



3. All other removals or damage shall be replaced or restored at the Contractor's expense.

6.1.5. Performance

A. Clearing:

1. Remove and dispose of all trees, brush, slash, stubs, bushes, shrubs, plants, debris and obstructions within the area to be cleared, except as otherwise shown on the drawings or as directed by the resident agent.
2. Remove all stumps unless otherwise directed by the Engineer.
3. Dispose of all material to be removed daily as it accumulates.
4. Clearing shall be carefully controlled and exact clearing limits, including all those trees to be removed, shall be laid out and marked, and be approved by the resident agent before any clearing is done. All clearing will be carefully controlled and held to an absolute minimum. The contractor will be required to prune overhead limbs rather than cut trees when in the opinion of the resident agent the work can be satisfactorily accomplished.
5. Damage to scarred trees shall be repaired by proper pruning where appropriate and application of an approved wound paint at the time of damage.
6. The contractor will be required to protect trees by placing lumber around the trees in a manner satisfactory to the resident agent.

7. No burning on site will be allowed. All brush or slash shall be disposed of by chipping or complete removal from the site as determined by the resident agent. All chips shall be disposed of at a location approved by the resident agent.
8. Any logs obtainable from cut trees remain the property of the owner and shall be cut into lengths and stockpiled as directed by resident agent.
9. Any culverts, utilities, etc., that must be disturbed will be restored to their original condition and to the satisfaction of the resident agent. All such restoration will be done as soon as practical after the disturbance.

B. Grubbing (When Applicable)

1. Perform grubbing work beneath new roads, driveways, walks, and other areas as directed by the resident agent or as shown on the Drawings.
2. Grub out all sod, vegetation and other objectionable material to a minimum depth of 12" below the existing grade.
3. All stumps, including major root systems, shall be completely removed.

C. Disposal

1. Remove from the site and dispose of noncombustible material.
2. Provide a disposal area approved by the resident agent.

6.1.6 Replacement of Materials

A. Paving, Curbing, and Miscellaneous Material:

1. Remove all paving, subpaving, curbing, gutters, brick, paving block, granite curbing, flagging, and minor structures over the areas to be excavated as directed by the resident agent.
2. Remove and replace bituminous asphaltic and portland cement concrete in accordance with the appropriate Section of the Division.
3. Properly store and preserve all material to be replaced in a location approved by the resident agent.

B. Shrubs and Bushes: Remove, store, and replace ornamental shrubs and bushes to be preserved in accordance with accepted horticultural practices.

C. Topsoil: Carefully remove, store, and protect topsoil in accordance with the appropriate Section of this Division.

D. Responsibility of the Contractor: Replace, at no additional cost to the Owner, materials lost or damaged because of careless removal or neglectful or wasteful storage, disposal or use of these materials.

6.2        SITE GRADING - EARTH

6.2.1.    General

- A. Profiles of the existing ground are shown on the drawings. The elevations are believed to be accurate. There may be minor variations due to an offset or for other reasons. The Contractor shall satisfy himself as to the existing ground elevations by actual inspection of the site, and the amount of work required to complete the job.
- B. Work Included: The site grading earth work consists of excavating, transporting, placing and compacting all material required to expediently perform for the work and the necessary cleanup and disposal of all other materials as shown on the drawings or specified herein.

6.2.2     Job Conditions

- A. Repairing Damage: Repair or have repaired all damage to existing utilities, structures, lawns, and other public and private property which results from construction operations at no additional cost to the Owner of such damaged property and to the complete satisfaction of the resident agent.

6.2.3     Quality Assurance

- A. Grading:
  - 1. Perform all work in conformance with the typical sections, countours, profiles and details shown on the drawings.

2. Construct the finish grade at all points to within 0.25' of the design.

B. In-Place Density: Compact backfill and embankment material, to not less than 80% of maximum density in conformance with ASTM-D1557 laboratory test.

C. Moisture content: Obtain proper moisture content necessary for construction.

D. Moisture and Density Testing:

1. Perform in-place density and moisture testing in conformance with ASTM-D1556.

2. Conduct at least two tests to insure the specified density is being obtained. Location of tests will be determined by the resident agent.

#### 6.2.4 Materials

A. Suitable Material: Material suitable as fill, on-site borrow and imported borrow shall be free from large clods of earth, vegetation, debris, large stones, organic matter and other matter deleterious to compaction and stability.

B. Excavated Material: Excavated material will be permitted for use as fill material, provided the material is suitable as determined by the resident agent. Bring excavated material to proper moisture content prior to its use as fill.

- C. Imported Borrow (when applicable): Provide suitable borrow material as required to obtain the lines, grades, profiles, contours, cross-sections and details as shown on the drawings and where directed by the resident agent. Imported material shall be subject to approval of the resident agent.
- D. Frozen Material (when applicable): No material, unless otherwise directed by the resident agent, may be placed on frozen or frost-bearing surfaces and no frozen material may be compacted with the intent to place additional lifts during the period of freezing. Should freezing occur during placement and compaction operations, suspend such activities for the duration of freezing weather.
- E. Excessive Moisture Content: Air dry, or dry by other approved methods, material designated for use as fill having a moisture content beyond the limits for proper compaction prior to its use. Dry or remove in-place material that has become too wet to permit proper compaction or stability prior to placement of additional layers of fill.
- F. Unsuitable Material:
  - 1. All excavated materials designated by the resident agent as unsuitable, shall become the property of the Contractor.
  - 2. Dispose of unsuitable material at locations acceptable to or designated by the resident agent at no additional cost to the Owner.

6.2.5 Performance

A. General:

1. Excavate all unsuitable material to a depth below finish grade as determined by the resident agent and backfill with suitable materials.
2. Conduct all excavations and fill operations in a manner and sequence to insure proper surface drainage at all times.

B. Preparation of Surfaces:

1. Compact all surfaces to receive fill material. Add moisture to the soils or aerate by plowing, discing, harrowing or other methods, to obtain the proper moisture content for compaction.
2. Remove unsuitable deposits encountered in areas designated for fill, and backfill with suitable material.
3. Construct and maintain temporary and permanent berms and drainage ditches as required to control surface runoff.
4. Locate material stockpiles in areas approved by the resident agent. Provide mulch or use other approved stabilization methods to prevent erosion of stockpile material.

C. Compaction:

1. The operation and maintenance of tamping rollers, vibratory rollers, pneumatic tired rollers, tandem rollers, 3 wheeled rollers and other equipment shall be well suited to the soil type being compacted.
2. Compact and test each layer prior to placing additional material.
3. Obtain the proper soil moisture content by adding water or by aerating with discs, harrows, blades or other suitable equipment.

D. Cleanup:

1. Cleanup work shall be completed when the condition of the site is approved by the resident agent.

6.2.6 Protection

- A. Extreme care shall be exercised to avoid existing shrubs, plants, trees, facilities, structures, landscape items, etc. The contractor shall take all necessary precautions to preclude damage to any of these items.
- B. Existing utilities, if and when encountered, shall be supported, protected or moved at the resident agent's discretion and at no cost to the Owner.
- C. Inactive or abandoned utilities shall be removed or plugged as directed by the resident agent.



- D. Any property corners, control points, benchmarks, etc. shall be preserved and any such points destroyed or disturbed shall be replaced at the Contractor's expense.
- E. Contractor shall take necessary precautions to protect the structural integrity of any and all buildings and facilities.

### 6.3 EMBANKMENT

#### 6.3.1 General

- A. Work Included: This work shall consist of placement of all material required for the embankment and necessary disposal of all other material as shown on the drawings and/or specified herein.

#### 6.3.2 Job Conditions

- A. Winter Construction Methods: No embankments shall be constructed on frozen materials. All frozen material shall be removed from the surface of embankments prior to placing additional material. The frozen lumps of earth removed shall be placed outside of the limits of an assumed 3 to 1 slope from the break in the shoulder and inside the designed or ordered slope line. Each layer of material placed shall be compacted to the required density before it freezes. If the above specified conditions cannot be met, embankment operations shall be suspended.

- B. Borrow Sources: Unless otherwise designated in the Contract, the contractor shall make his own arrangements for obtaining borrow and shall pay all costs involved. All sources of borrow, whether within the right-of-way or elsewhere, shall be approved by the resident agent before any borrow is removed.

6.3.3 Materials

- A. Borrow shall consist of approved material required for the construction of fills or other portions of the work and shall be obtained from sources approved by the resident agent.

6.3.4 Placing

- A. General: The embankments shall be finished to smooth and uniform surfaces as required by the resident agent.
- B. Embankments:
1. Backfill of holes: Holes resulting from the removal of stumps, boulders, and the like, within the zone of anticipated frost action, shall be filled and compacted with material similar to that surrounding the hole.
  2. Placing in Unstable Areas: Material used to backfill excavated muck shall consist of rock or granular material so graded that, of the material passing the #4 sieve, not more than 70% will pass the #40 sieve and not more than 35% will pass the #200 sieve. The material shall be placed in one continuous lift to a maximum elevation of 4' above the existing water level, unless otherwise directed.

3. Placing Rock on Roadway: Rock fragments in fills shall be placed in layers of such thickness as the Engineer may direct, and in no case in excess of 4'. Rock fill will not be permitted within 48" of the finish grade in roadway embankments and within 24" in other areas unless otherwise directed by the resident agent. Each lift shall be worked in such a manner as to close the voids with spalls and fines. When sufficient spalls or fines are not available to close the voids, earth shall be used to make a tight surface prior to placing the next lift.
4. Placing earth on Roadway: Earth shall be placed in layers the full width of the roadway, generally parallel to the finished grade. The layers shall not exceed 12" of loose depth unless otherwise directed. Each layer shall be spread to a uniform thickness and compacted to the required density prior to placing the next layer. Continuous grading or shaping shall be carried out concurrently with the compactive effort to insure uniform density throughout each layer of material. Embankment material to be placed adjacent to structural fill shall be placed concurrently with the structural fill to provide lateral support.
5. Embankments shall be graded at all times to insure the runoff of water. Any saturation of non-porous due to the Contractor's selected method of operation will occasion the suspension of additional work on the area until rectification by drying, removing and replacing, or drainage has restored the fill to a stable condition, at the Contractor's expense.

6.3.5 Field Quality Control

- A. Density Requirements and Tests: The embankment shall be compacted to at least 90% of maximum density as determined by ASTM D1557. In-place density shall be performed in accordance with ASTM D1556, or ASTM D2167 at the Contractor's expense at least once per lift. If the required density cannot be achieved with the equipment at hand, the Contractor shall obtain whatever equipment is necessary to achieve the specified density.

6.4 STRIPPING & STOCKPILING TOPSOIL

6.4.1 General

- A. Work Included: Topsoil stripping and stockpiling work includes the removal, transportation, removal of objectionable material, and storage of topsoil prior to excavation, trenching and grading operations.

6.4.2 Performance

A. Amount of Stripping

1. Remove topsoil from the area and to the depths shown on the drawings and/or as directed by the Engineer.
2. Remove topsoil from the areas to be disturbed as a result of construction operations.

B. Storage:

1. Remove roots, stones, and other undesirable materials from the topsoil.
2. Stockpile topsoil separate from other excavated materials in areas approved by the resident agent.
3. Take all necessary precautions to prevent other excavated material and objectionable material from becoming intermixed with the topsoil before, during and after stripping and stockpiling operations.
4. Neatly trim and grade stockpiles to provide drainage from surfaces and to prevent depressions where water may become impounded.
5. Construct temporary erosion control devices for all stockpiled material, subject to the resident agent's approval.

6.5 EARTH EXCAVATION

6.5.1 General

A. Work Included:

Excavation work in earth includes the removal of sand, gravel, ashes, loam, clay, swamp muck, soft or disintegrated rock, or hardpan, or a combination of such material and boulders measuring less than 1 CY.

6.5.2     Job Conditions

A.   Utilities:

1.   The locations of known utilities, telephone cables, storm drains, culverts, and other utilities are shown on the drawings. No guarantee is made as to the correctness of the locations shown and to the completeness of the information given.

B.   Existing Structures:

1.   Perform excavation in such a manner that will prevent any possibility of undermining and disturbing the foundations of any existing structures and any work previously completed under this contract.
2.   Where existing buildings and other structures are in close proximity to the proposed construction, exercise extreme caution and utilize sheeting, bracing, and whatever other precautionary measures that may be required.

C.   Repairing Damage:

1.   Repair, or have repaired, all damage to existing utilities, structures, lawns, other public and private property which results from construction operations, at no additional expense to the owner, to the complete satisfaction of the resident agent and/or the utility company.

6.5.3 Materials

A. The Contractor shall not have any right of property in any suitable materials from the construction site without the approval of the resident agent. This provision shall in no way relieve the Contractor of his obligations to remove and dispose of any material determined by the resident agent to be unsuitable for backfilling.

B. Unsuitable Material:

1. If, in the opinion of the resident agent, the material encountered ABOVE the indicated grade shown on the drawings, for excavation is unsuitable material, remove the material to the widths and depths as directed by the resident agent.
2. All excavated materials designated by the resident agent as unsuitable shall become the property of the Contractor and disposed of at locations acceptable to or designated by the resident agent, at no additional cost to the Owner.

C. Disposal of Surplus Excavated Materials:

1. No excavated materials shall be removed from the site of the work or disposed of by the Contractor except as directed or approved by the resident agent.
2. Surplus excavated materials not needed as specified above shall be hauled away and disposed by the Contractor, at his expense, at appropriate locations and in accordance with arrangements made by him.

6.6 LEDGE EXCAVATION

6.6.1 General

A. Work Included:

1. Excavation work in ledge includes the removal of ledge and rock.
2. "Ledge" and "rock" includes any natural compound, natural mixture, and chemical element required to be excavated that, in the opinion of the resident agent, can be removed from its existing position and state only by blasting, drilling and blasting, wedging, drilling and wedging, wedging and breaking with power hand tools, or by extending the use of an approved excavating machine beyond normal and design wear and tear. No boulder, ledge, slab, or other single piece of excavated material less than 2 CYs in total volume shall be considered to be rock unless, in the opinion of the resident agent, it must be removed from its original position by one of the mentioned above.

6.6.2 Job Conditions

A. Utilities:

1. The location of known utilities, telephone cables, storm drains culverts, gas mains, electric conduits are shown on the drawings. No guarantee is made as to the completeness of the information given.
2. Use manual excavation methods to locate existing utilities.



B. Existing Structures:

1. Perform excavation in such a manner that will prevent any possibility of undermining and disturbing the foundations of any existing structures.
2. Where existing buildings and other structures are in close proximity to the proposed construction, exercise extreme caution and utilize whatever precautionary measure, approved by the resident agent, that may be required.

C. Repairing Damage: Repair, or have repaired all damage to existing utilities, structures, lawns, and other public and private property which results from construction operations, at no additional expense to the Owner, to the complete satisfaction of the resident agent and/or the utility company.

6.6.3 Materials

- A. The Contractor shall not have any right of property in any suitable materials taken from any excavation. The Contractor shall not remove any such materials from the construction site without the approval of the resident agent. This provision shall in no way relieve the Contractor of his obligations to remove and dispose of any material determined by the resident agent to be unsuitable for backfilling.

6.6.4 Performance

A. General:

1. Unless otherwise specifically directed or permitted by the resident agent, begin excavation at the southern end of the bridge and proceed northward. Equipment shall be placed on the northern end of the bridge.

- B. Disposal of Material: All excavated ledge shall become the property of the Contractor and disposed of at locations acceptable to or designated by the resident agent, at no additional cost to the Owner.

6.7 DUST CONTROL

6.7.1 General

- A. Work Included: Furnish and apply water or calcium chloride on the surfaces within the construction site, when directed by the resident agent.
- B. This work shall be considered incidental to the successful completion of the contract, and shall be done at the direction of the resident agent and at no expense to the Owner.

6.7.2 Material

- A. Water for sprinkling: Clean, free of salt, oil, and other injurious matter.
- B. Calcium chloride: Meet the requirements of AASHTO M144.

6.7.3 Application

A. Water:

1. Apply water by methods approved by the resident agent.
2. Apply at a rate sufficient to maintain a damp surface but low enough to assure non-contamination of water courses.

6.8 MISCELLANEOUS

6.8.1 Sheeting and Shoring

- A. Where necessary to maintain side walls, the Contractor may elect to provide sheeting and bracing. While the Contractor is responsible for all safety, the resident agent may direct the Contractor to install support for trench walls to include sheeting, walling, bracing or whatever in his opinion is required for the safety of employees, residents, utilities, or personal property.
- B. All sheeting and bracing shall be removed when no longer required, unless otherwise directed by the resident agent.
- C. No separate payment will be made for any sheeting or bracing whether recovered or not.

6.8.2     Drainage

- A. The Contractor shall perform all pumping, dewatering and draining, provide well points or provide any necessary means to permit property execution of the work. Care shall be taken to prevent soil or water from entering completed works. All water removed shall be satisfactorily disposed of by using lagoons or any other means so as not to create siltation in the adjacent surface waters or create unsanitary conditions nor cause inconvenience to the residents or cause damage to personal property.
- B. The Contractor shall build sediment traps, apply slope stabilization, spread straw, hay, gravel filters or employ any other means, whether directed by the resident agent or not, to prevent erosion and to prevent turbid water from being discharged to surface waters. The Contractor will be held solely responsible for any pollution of adjacent waters if it is shown that his operation is the cause. He will take immediate corrective action if so ordered by the Town or State.

6.8.3     Clean-Up, General

- A. All track marks, ruts, depressions, mounds, etc. will be smoothed by hand raking or by small machine.
- B. Any slopes over 5% will be graded as directed by the resident agent. The Contractor will apply a sufficient amount of wood chips, obtained from the clearing operation, or equal, to prevent erosion.

6.8.4. Clean-Up in Unpaved Areas

- A. All brush, slash, etc. will be cleaned up and disposed of. Any trees that are scarred or damaged will be repaired as directed, including complete removal if required.
- B. All yards, walkways, driveways, green areas, etc. will be restored to their original condition. Any shrubs, lawns, structures, landscape items, etc. shall also be restored or replaced, as directed, to their original condition.

6.8.5 Clean-Up in Paved Areas

- A. The Contractor shall provide for replacement of all pavement damaged by his operation in a manner and with materials approved by the resident agent.
- B. When approved and directed by the resident agent, the Contractor shall remove the top 12" of material. He shall saw cut for jointing to existing pavement. He shall provide 6" of bankrun gravel, maximum size 4" from a source approved by the Owners representative. This base coarse shall be compacted to a density of not less than 95% of the density obtained from a Standard Proctor Test. The moisture content of the gravel shall be maintained at optimum plus or minus 2%.
- C. The Contractor shall provide 3" crushed bank run gravel (CBR, maximum size  $1\frac{1}{2}$ "). He shall compact the same as gravel noted above. The CBR shall be fine graded using a machine grader and made ready for paving.
- D. The Contractor shall provide and place 3" of Hot Bituminous Pavement in accordance with the latest edition of the Standard Specification of NHDPW&H. The Mix shall be Binder Coarse, maximum  $1\frac{1}{2}$ ".

E. The joint at the existing pavement shall be liberally covered with an approved emulsion.

6.9 EROSION CONTROL

6.9.1 General

CONTROL OF POLLUTION DUE TO CONSTRUCTION: During construction, the Contractor shall take precautions sufficient to avoid the leaching or runoff of polluting substance such as silt, clay, fuels, oils, bitumens, calcium chloride and any other polluting materials which are unsightly or which may be harmful to humans, fish or other life, into groundwaters and surface waters of the State. In waters used for public water supply or used for trout, salmon, or other game or forage fish spawning or nursery, control measures must be adequate to assure that turbidity in the receiving water will be increased to not more than 10 standard turbidity units (S.T.U.) in the absence of other more restrictive locally established limitations, unless otherwise permitted by the New Hampshire Water Supply and Pollution Control Commission. In no case shall the classification for the surface water be violated unless otherwise permitted by the Commission (NHWS&PCC).

DREDGING PERMIT: Section 149:8-a of the "Laws Relating to the Water Supply and Pollution Control Commission" requires that any person(s) proposing to dredge, excavate, place fill, mine or undertake construction in the surface waters of the State, shall be responsible for obtaining a permit for any such activity from the foresaid Commission.

SAFETY HEALTH: This project is subject to all Safety and Health Regulations (see CFR 1518 as amended) as promulgated by the U.S. Department of Labor on 4-17-71. Contractors are urged to make themselves familiar with the requirements of the regulations.

6.9.2 Temporary Erosion Control

Part 1 - General

Description

A. Description of Work:

1. Provide all labor, equipment, materials and maintain temporary erosion control devices as specified herein.
2. Provide such erosion control measures as may be necessary to correct conditions that develop prior to the completion of permanent erosion control devices or as required to control erosion that occurs during normal construction operations.
3. Comply with NHDPW&H Erosion Control Specs, Section 645, and all Federal, State and local regulations pertaining to erosion control.
4. After being awarded the Contract, prior to commencement of construction activities, meet with the Engineer to discuss erosion control requirements and develop a mutual understanding relative to details of erosion control.

B. Related Work:

1. The Contractor will utilize a fabric as specified herein for construction in all marsh areas.
2. Conduct all construction in a manner and sequence that causes the least practical disturbance of the physical environment.

3. Stabilize disturbed earth surfaces in the shortest practical time and employ such temporary erosion control devices as may be necessary until such time as adequate soil stabilization has been achieved.

## Part 2 - Products

### Acceptable Materials

- A. Construction Fabric: a fabric shall underlie all construction activity in marsh areas to control erosion from temporary roadway, trench spoils and other material.
- B. Baled Hay: At least 14" x 18" x 30" securely tied and and staked twice per bale.
- C. Sand Bags: Heavy cloth bags of approximately 1 cubic foot capacity filled with sand or gravel.
- D. Mulches:
  1. Asphalt emulsion, compost, manure, corn stalks, gravel, crushed stone, loose hay, straw, peat moss, pine straw or needles, sawdust, wood chips, wood excelsior, or wood fiber cellulose.
  2. Type and use shall be as specified by the resident agent.
- E. Nettings:
  1. Twisted craft paper, yarn, jute, excelsior, wood fiber mats, glass fiber, and plastic film.
  2. Type and use shall be as specified by the resident agent.



F. Seed:

1. Standard conservation mix of 100% annual rye grass or field brome grass.
2. Equivalent seed mixture may be used as approved by the resident agent based on its suitability for use in controlling erosion of the various soil types and slopes.

G. Sod:

1. Grown from certified seed of adapted varieties to produce high quality sod free of any serious thatch, weeds, insects, diseases and other pest problems.
2. At least one year old and not older than three years. Cut with 1/2" to 1" layer of soil.

Part 3 - Execution

Construction Requirements

A. Construction Fabric in Marsh Areas:

1. To be installed according to manufacturer's recommendations for use in all marsh areas.
2. All work, including equipment moving, storage of trench spoils and storage of other backfill shall be performed on top of a construction fabric in these areas.

B. Temporary Erosion Checks:

1. Construct temporary erosion checks in ditches and other locations designated by the resident agent.
2. Baled hay and/or sand bags may be used in an arrangement to fit local conditions designated by the resident agent.
3. Terrace side slopes to retard runoff velocities.

C. Temporary Berms:

1. Construct temporary barriers along the toe of embankments when designated by the resident agent.
2. Construct temporary side drains in intervals designated by the resident agent.

D. Debris Basin:

1. A barrier or dam constructed across waterway or other suitable location to form a silt or sediment basin.
2. Capacity shall be equal to the volume of sediment expected to be trapped at the site during the planned use for life of the structure or if the periodic removal of debris would be practical the capacity shall be proportionally reduced.
3. Design shall be in accordance with the Standards for Ponds, Grade Stabilization Structure of USDA Soil Conservation Service Engineering Memorandum No. 27 and/or as shown on the Drawings.

### Performance

- A. Install erosion control devices as specified herein.
  - 1. Install construction fabric as required.
  - 2. Apply seed for temporary cover at a rate of 40 lbs. per acre.
  - 3. Apply hay or straw at a rate of 2 tons per acre.
  - 4. All temporarily seeded areas shall be hydroseeded.
- B. Protection:
  - 1. Protect streams and channels from fuel, lubricants and other pollutants.
  - 2. Locate storage in areas where erosion and sediment hazards are slight.

### Removal and Disposal

- A. General: When permanent soil stabilization has been achieved, such temporary materials and devices that are unsightly in appearance or not readily degradable shall be removed.
- B. Reuse: Materials and devices of suitable type and conditions may be reused at other onsite locations when approved by the resident agent. Materials and devices, determined by the resident agent to be unsuitable for reuse, shall become the Contractor's property and shall be disposed of in a manner and location approved by the resident agent.

C. Onsite Disposal When Applicable: The locations and methods of onsite disposal are subject to the resident agent's approval. Onsite disposal that results in unsightly conditions, precludes proper maintenance and is detrimental to the physical environment will not be permitted.

D. Construction Fabric: When work in a marsh area is completed, the following is to be removed from the marsh:

1. Temporary gravel roadway.
2. Unsuitable backfill.
3. Any other temporary construction material.
4. The construction mat.

The site is then to be restored to its original condition to the extent possible.

#### 6.9.3 Construction Fabrics

##### Part 1 - General

##### Description

A. Work Included: Furnish and install construction fabric in locations as directed by the resident agent such that construction impacts to sensitive marsh areas are minimized.

B. Related Work Specified Elsewhere: Temporary erosion control as previously specified.

### Submittals

- A. Shop drawings of the fabric shall be submitted to the resident agent for approval prior to installation. The Contractor will demonstrate that the strength of the chosen fabric, while meeting the physical characteristics given below, shall withstand without failure the stresses which will be applied by his equipment and actively using his proposed construction techniques.

### Part 2 - Products

#### Materials

- A. Material shall be non-woven fabric made of polyester filaments.
- B. The fabric shall be inert to commonly encountered chemicals, liquids and other material, and shall be resistant to ultraviolet light, mildew, rot or other deterioration.
- C. The fabric shall have the following physical characteristics:
  - 1. Coefficient of Permeability: 0.1 cm/sec
  - 2. Equivalent Opening Size: 50  
(U.S. Standard Sieve)
- D. Strength characteristics of the fabric shall be such as to ensure that fabric will remain free of tears, rips or punctures during all construction and removal activity.

### Part 3 - Execution

#### Storage and Handling

- A. The fabric shall be stored and handled in such a way as to prevent any damage and according to the manufacturer's recommendations.

#### Installation

- A. The fabric shall be installed to provide continuous coverage of the work area, without gaps or tears. Adjacent sheets shall be overlapped a minimum of 24" or greater if recommended by the manufacturer.
- B. The installation shall be secured by metal pins at least 3/16" in diameter and inserted vertically at least 18" deep. The pins shall be such that they may be readily removed and will not push completely through the fabric.

#### Removal

- A. Upon completion of construction activity, the fabric shall be removed completely from the site. All material stored temporarily on top of the fabric shall also be removed.



**NORMANDEAU ASSOCIATES, INC.**

**ENVIRONMENTAL SCIENTISTS,  
ENGINEERS & PLANNERS**

**25 NASHUA ROAD, BEDFORD, N.H. 03102**

**(603) 472-5191**

NAI Project #494

March 19, 1986

Mr. Walter Lermer, Chairman  
Board of Selectmen  
Town Hall  
North Hampton, New Hampshire

Re: Little River Marsh Engineering Analysis

Dear Mr. Lermer:

In accordance with our Agreement, we are pleased to submit our Preliminary Engineering Report.

In preparing the Report, our Professional Staff has reviewed previous reports; conducted field investigations; and performed an Engineering Economic Analysis of proposed alternatives.

We appreciate the guidance that all members of the Town, and Ms. Joanne Cassulo of the Office of State Planning have provided us throughout the course of this Report.

Sincerely,

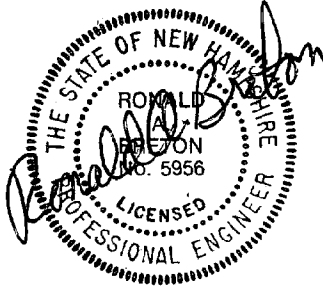
NORMANDEAU ASSOCIATES, INC.

Raymond P. Carter, P.E.

RPC/dg

Enclosure

NORMANDEAU ASSOCIATES, INC.



Town of North Hampton  
New Hampshire  
Little River Marsh  
Engineering Analysis

Prepared for:

Town of North Hampton  
New Hampshire

Prepared by:

NORMANDEAU ASSOCIATES, INC.  
25 Nashua Road  
Bedford, New Hampshire 03102

March 19, 1986

NAI Project #494



Town of North Hampton  
Board of Selectmen

Walter S. Lermer  
Chairman

Richard J. Lynch  
Selectmen

Robert Carrigg  
Selectmen

INTRODUCTION

Frederick T. Short, Ph.D., in his report entitled "North Hampton Salt Marsh Study" states that, "The problem at the Little River Marsh is that there is not enough flushing of saline tidal ocean water up into and then back out of the marsh." Dr. Short also points out in his study that the only connection between the marsh and the ocean is a culvert under Route 1A at the north end of the marsh by the fish houses. Unfortunately, this culvert cannot provide the entire marsh with an adequate supply of salt water as it is apparently too small and is sometimes blocked with sand. Thus, the marsh is slowly being invaded by freshwater marsh plants which is a barrier rather than a protective habitat for wild life.

To reverse this degradation process, Dr. Short has recommended that a 48-inch diameter culvert be installed under Route 1A. This culvert would extend from the Little River as it passes the north side of Fifield Island to Godfrey's Ledge, offshore. The recommendation to extend the pipe out into the ocean was made in an effort to circumvent the potential problem of the seaward end of the culvert filling with sand.

In the same study, Dr. Short also recommended another alternative. That is, construct a drainage swale starting near the fish house culvert and running parallel to the shore over to Little River at the north side of Fifield Island. To ensure that there would be an adequate flow of salt water to the far reaches of the marsh, a 48-inch pipe must be constructed parallel to the existing 48-inch pipe running under Route 1A, by the fish houses, to the ocean.

Alternate No. 1

The first alternative of installing a 48-inch pipe under Route 1A, at the south end of Little River Marsh, and extending approximately 1,500 feet to Godfrey's Ledge, would cost about \$1,500,000. As previously stated, the reason for extending the pipe out to the ledge is to avoid the potential problem of the pipe plugging with sand. By constructing the pipe at the south end of the marsh, it would ensure that the tidal waters reach the south end of the marsh, where it is needed most. However, this alternative has some drawbacks. First, it is much more expensive than second alternative. Secondly, it would require a jetty to cover the exposed pipe. Obviously, this would not be a particularly appealing solution to the public which now enjoys one of the finest beaches in the area.

Alternate No. 2

The second alternative consists of constructing a drainage swale and installing about 300 feet of pipe, at a cost of approximately \$200,000. This estimate is based upon open cutting under Route 1A, and dewatering of excavation by open pumping.

During our study period, a bar grate was added to the existing culvert, in an effort to prevent the pipe from being plugged with sand. From testimony of the State Highway Department maintenance crew, it is their belief that rocks are washed into the seaward end of the pipe which then causes the sand to settle out which ultimately plugs the pipe.

Periodic observations of the pipe since the installation of the grate tends to support the Highway theory as the pipe appears to be relatively free of sand.

In addition to the bar grate being added at the seaward end of the pipe, we also propose that a slide gate at the marsh end of the pipe be installed. When the gate is closed it would allow the water to back up in the marsh and create a back pressure which would flush the pipe of sand when the slide gate is opened. This would increase the project cost by an estimated \$15,000.

This alternative also has its drawbacks. First, this solution would require building a drainage swale behind expensive beach properties. Although the construction may not be particularly difficult from an engineering viewpoint, it could be a costly and time consuming project depending upon the abutters reactions. Secondly, the saline flushing action is needed at the south end of the marsh; constructing an outlet at the north end of the marsh may not be as effective as alternative No. 1.

There is some doubt concerning the effectiveness of adding a rock grate to the pipe extending into the ocean from the southern end of the Little River Marsh. At the north end outlet to the ocean, the shore bottom is relatively rocky compared to the shore bottom at the southern end of the marsh. Further, the northern outlet is protected somewhat by Little Boars Head. Whereas the southern outlet of the marsh is mostly sand as evidenced by the build up of sand at the existing marsh outlet.

With the rapid build up of sand in this area, it is unlikely that a rock grate would be effective in preventing the pipe from becoming plugged with sand. Accordingly, a cost estimate for a reduced length of pipe has not been included in this report.

#### SUMMARY

As a result of an inadequate supply of ocean water, the Little River Marsh is slowly being invaded by freshwater marsh plants which is changing the protective habitat of the marsh. To reverse this process, the following alternatives have been proposed:

1. Construction of a 48-inch culvert from the southern end of the marsh to Godfrey's Ledge. This alternative would cost an estimated \$1,500,000.
2. Construction of a drainage swale south along Route 1A from the fish houses to Little River and a 48-inch culvert, with a rock grate, beginning at the end of the marsh and extending to the existing outfall area. This alternative would cost an estimated \$215,000.00.

#### RECOMMENDATIONS

Without Federal and State funding, the cost to the Town for the design and construction of alternative No. 1 is prohibitive. Accordingly, to save as much of the Little River Marsh as possible, it is recommended that alterantive No. 2 be pursued by the Town.

During the final design phase of this project, it is also recommended that instead of adding another 48-inch diameter pipe under Route 1A, that the cost of installing one large box culvert be explored. That is, the cost and advantages of installing a box culvert which is hydraulically equivalent to two 48-inch diameter pipes should be evaluated during final design.

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